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New Species of Fungi*

BY FLORA W. PATTERSON

Hendersonia oleae

Forming large marginal pallid patches, with brown border: perithecia black, membranous, immersed, amphigenous, globose, 100–150 μ : conidia light olivaceous, oblong-elliptical, with sub-acute ends, 3-septate, not constricted, straight or slightly curved, 10 \times 3.5 μ .

On leaves of *Olea dioica*, Botanic Garden, Sydney, New South Wales, April, 1898, J. H. Maiden.

Leptothyrium nitidum

Not forming spots: perithecia superficial, densely gregarious, sometimes confluent, elliptical-dimidiolate, black, shining, astomate, occasionally longitudinally striate, context radiately cellular: conidia cylindrical, straight or slightly curved, hyaline, 2.5–3 \times 1 μ : sterigmata 6 \times 2 μ , arising from a compact layer of hyaline, rectangular cells, which are filled with large guttulae.

On dry stems of *Heracleum lanatum*, Longpine, Nebraska, February 24, 1898, J. M. Bates, no. 769.

Gloeosporium cassiae

Spots alutaceous, irregular in outline, with a raised brown border: acervuli amphigenous, scattered throughout the spots, raising the epidermis in a pustuliform manner, then erumpent: conidia ovate, pointed at one end, straight or slightly inequilateral, 4–6 \times 1.5–2 μ : basidia hyaline, continuous, 15 \times 1.5 μ .

On living leaves of *Cinnamomum cassia*, greenhouse, U. S. Department of Agriculture, January, 1900, F. W. P.

Gloeosporium clausenae

Spots large, irregular, subochraceous, with wavy, darker border on the margin of the leaves, most especially involving the tips: acervuli generally epiphyllous, very numerous, at first covered by the epidermis, subochraceous, erumpent: conidia ovate-oblong,

* Type specimens of these species are in the herbarium of the Division of Vegetable Physiology and Pathology, U. S. Department of Agriculture.

often inequilateral : ends obtuse or rounded, $15-17 \times 5-6 \mu$: basidia filiform, hyaline, shorter than the conidia.

On living leaves of *Clausena wampi*, greenhouse, Department of Agriculture, January, 1900, F. W. P.

Gloeosporium ochraceum

Causing large arid spots of irregular shape, especially upon the ends of the leaves, alutaceous, with a dark brown border : acervuli amphigenous, raising the epidermis in dark pustules becoming erumpent : conidia ochraceous in the mass, ovate, somewhat pointed at one end, guttulate, $12-15 \times 4-5 \mu$: basidia hyaline, $9-12 \times 3 \mu$.

On living leaves of *Cinnamomum aromaticum*, greenhouse, Department of Agriculture, January, 1900, F. W. P.

It will be observed that while the general appearance produced by the presence of *Gloeosporium ochraceum* on *Cinnamomum aromaticum* is very similar to that of *Gloeosporium cassiae* on *Cinnamomum cassia*, they differ widely in microscopic details.

Gloeosporium oleae

Spots white, arid, with an inconspicuous brown border, large, sometimes occupying about one-fifth of the leaf's surface : acervuli epiphyllous, numerous, long, covered by the epidermis, erumpent, dark, almost black : conidia oblong or ovate-oblong, sometimes slightly inequilateral, often bi-guttulate, $9-15 \times 4-5 \mu$.

On living leaves of *Olea fragrans*, greenhouse, Department of Agriculture, January, 1900, F. W. P.

Colletotrichum setosum

Spots large, irregular, arid, yellowish-white, with purple border : acervuli amphigenous, not erumpent, numerous, minute, $25-45 \mu$ diameter : setae very dark brown, septate, slightly flexuous, obtuse, with somewhat enlarged base, $30-45 \times 4 \mu$: conidia oblong, with rounded ends, $15-17 \times 4-5 \mu$.

On *Tillandsia* sp., greenhouse, U. S. Department of Agriculture, received 1899 from Costa Rica, C. Werckle.

Libertella olivacea

Acervuli densely gregarious, subcutaneous, at length erumpent, sub-conical, .5-1 mm. diameter, olivaceous : conidia hyaline, filiform, curved, $5-6 \times 1 \mu$: basidia filiform, $10-12 \times 1 \mu$.

On dead branches of *Rhus glabra*, Ainsworth, Nebr., May 14, 1898, J. M. Bates, no. 814.

Aspergillus umbrinus

Sterile hyphae creeping, branched, septate, hyaline, fertile hyphae erect, simple, septate, hyaline or slightly colored, $150-300 \times 6-8 \mu$, apex inflated, sub-globose, $15-24 \mu$, generally 18μ : sterigmata club-shaped, $12 \times 6 \mu$: conidia in chains, bright umber colored, verrucose, $6-9 \mu$ diameter.

The description is for the typical form from which there are extreme variations. Fertile hyphae may be only 18μ in length, having an apex but slightly and irregularly enlarged, which may bear but 3-6 sterigmata, which are sometimes flask-shaped, $9-18 \times 6-8 \mu$, and occasionally septate. When cultivated upon sterilized potato the species grows with great luxuriance. Measurements of conidia and hyphae remain practically the same, but the vesiculose portion is more nearly spherical and ranges from $30-45 \mu$ in diameter, with sterigmata averaging 15μ .

Upon such cultures in about five weeks there have developed numerous snow-white sclerotia, 1-5 mm. in height and 1-3 mm. in breadth.

In Brazil nut, Washington, D. C., February, 1900, E. A. Bessey.

Sterigmatocystis castanea

Thinly effused: fertile hyphae erect, simple, continuous, hyaline, $400-550 \times 12 \mu$: apex inflated to a spherical head, $30-40 \mu$, from which radiate clavulate basidia 16μ in length: sterigmata 4, $6-7 \times 2 \mu$: conidia in chains of 4 or 5, spherical, verrucose, brown, $4-5 \mu$.

On *Persoonia lanceolata*, New South Wales, March, 1898, J. H. Maiden.

Cladosporium aeruginosum

Tufts epiphyllous, verdigris green, densely fasciculate, distinct, upon light-colored arid spots: hyphae simple, septate, nodulose, very light green, $45-90 \times 3-3.5 \mu$: conidia lateral and terminal, in chains of 5 or more, almost hyaline, generally oblong and continuous, sometimes oblong-elliptical and once or twice septate, $5-12 \times 2-2.5 \mu$.

On living leaves of *Olea fragrans* affected by *Gloeosporium oleae*, greenhouse, Department of Agriculture, January, 1900, F. W. P.

Cladosporium fici

Not forming spots: tufts conspicuous, aggregated, sometimes confluent, olive green: hyphae long, erect, slightly wavy, very rarely branched, septate, $45-250 \times 4 \mu$: conidia light olive, terminal and lateral, more especially borne near the tips of the hyphae, oblong continuous ones $6-9 \times 4 \mu$, sometimes in chains of 4, those 1-3 septate, oblong-elliptical to cylindrical, $9-25 \times 4-5 \mu$, somewhat thickened at the septa and the longer ones often equilateral.

On living leaves of *Ficus parcelli*, greenhouse, Department of Agriculture, January, 1900, F. W. P.

Helminthosporium solitarium

Sterile hyphae inconspicuous, generally subepidermal: fertile hyphae, but slightly fasciculate, often solitary, erect, dark sooty brown, septate, swollen at the base, the upper portion (about $\frac{1}{3}$, upon which the spores are borne) wavy or twisted, usually lighter colored at the apex, $60-150 \times 6 \mu$; conidia dark brown, at first 2-4-guttulate, then 3-5-septate, oblong-elliptical, sometimes slightly curved, $24-30 \times 8-9 \mu$.

On leaves of *Iris* sp. affected with *Fusarium iridis* Oud., Minneapolis, Minn., October, 1898, J. M. Bates, no. 928.

Heterosporium oxybaphi

Sterile hyphae subcuticular: fertile hyphae erect, densely fasciculate, fuscous olivaceous, simple, septate, coarsely nodulose, $90-125 \times 6-7 \mu$: conidia in short chains soon falling apart, fuscous-olivaceous, epispore echinulate, elliptical or ovoid, 1-2- rarely 3-septate, seldom constricted at the septa, $18-27 \times 9-12 \mu$.

On dead stems of *Oxybaphus angustifolius*, Longpine, Nebraska, June 24, 1898, J. M. Bates, no. 821.

Stemphylium butyri

Hyphae decumbent, long, wavy, grayish black, closely septate, $3-4 \mu$ in diameter: fertile branches often very short: conidia darker than hyphae, verrucose, constricted at the septa, very irregular in shape, sometimes almost spherical, generally elliptical or sub-pyriform, borne at the tip or sides of the branches, sometimes two or three connate and in clusters, $18-36 \times 9-18 \mu$.

Butter affected with this fungus assumes a bluish-black color in isolated spots, and these gradually extend over the entire surface. The specific description is written from an examination of butter sent to the Division of Vegetable Physiology and Pathology

from the Agricultural Experiment Station of Oregon, by D. W. Trine, and from cultures of the same made upon agar-agar. Mr. A. F. Woods reports having seen the same species, which he recognized as a new one, in butter from South Carolina and other localities.

Stemphylium elasticae

Effused, grayish-black, decumbent, intricately branched, closely septate, $3-3.5\ \mu$ in diameter: conidia borne in chains of 2-6 at or near the tips of the fertile branches, not soon falling apart: verrucose, muriformly many-septate, constricted at the septa, darker than the hyphae, irregular in shape, ovate and somewhat pyriform or cylindrical, $18-45 \times 9-18\ \mu$, isthmus cell almost hyaline, $2-3\ \mu$.

On parts of leaves of *Ficus elastica* attacked by *Gloeosporium elasticae* Cke. and Mass., Washington, D. C., January, 1900, F. W. P.

Volutella allii

Sporodochia black, sessile, convex, elongated, $100-150\ \mu$ in diameter, gregarious and sometimes confluent, densely covered with rigid black setae that are smooth with pointed tips and are $60-175 \times 6\ \mu$; conidia fusiform-falcate, hyaline, $18-21 \times 3-4\ \mu$; conidiophores densely crowded, unbranched, hyaline or slightly olive tinged, $18-20 \times 3\ \mu$.

On scapes of *Allium Nuttallii*, Atkinson, Neb., June 22, 1898, J. M. Bates, no. 820.

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